

WHAT IS CLAIMED

1. An arrangement for generating an output voltage as a function of inductor current in a pulse width modulation-based DC-DC voltage converter, having an upper controlled switch and a lower controlled switch coupled in series between an input voltage terminal and a reference voltage terminal, a common connection of said upper controlled switch and said lower controlled switch providing a phase node voltage, an inductor coupled between said phase node and an output node arranged to be coupled to a load, comprising:

a controller which is operative to monitor said phase node voltage and an output voltage at said output node, and is operative to generate a sense current as a function of the difference between said phase node voltage and said output voltage; and

a resistor-capacitor network comprised of a resistor R_s and a capacitor C_s coupled to receive said sense current and producing a voltage thereacross that is proportional to said inductor current.

2. The arrangement according to claim 1, wherein said inductor is comprised of series circuit of an inductor component L and a direct current resistance component DCR , and wherein the product of $R_s * C_s = L / DCR$.

3. The arrangement according to claim 1, wherein said resistor-capacitor network is referenced to ground.

4. A method for generating an output voltage as a function of inductor current in a pulse width modulation-based DC-DC voltage converter, having an upper controlled switch and a lower controlled switch coupled in series between an input voltage terminal and a reference voltage terminal, a common connection of said upper controlled switch and said lower controlled switch providing a phase node voltage, an inductor L and a parasitic direct current resistance (DCR) coupled between said phase node and an output node arranged to be coupled to a load, said method comprising the steps of:

(a) monitoring said phase node voltage and an output voltage at said output node, and generating a sense current as a function of the difference between said phase node voltage and said output voltage; and

(b) supplying said sense current to a resistor-capacitor network comprised of a resistor R_s and a capacitor C_s , wherein the product of $R_s * C_s = L / \text{DCR}$, so as to produce a voltage across said resistor-capacitor network that is proportional to said inductor current.

5. The method according to claim 3, wherein said resistor-capacitor network is referenced to ground.